CMS data analysis - Hands on

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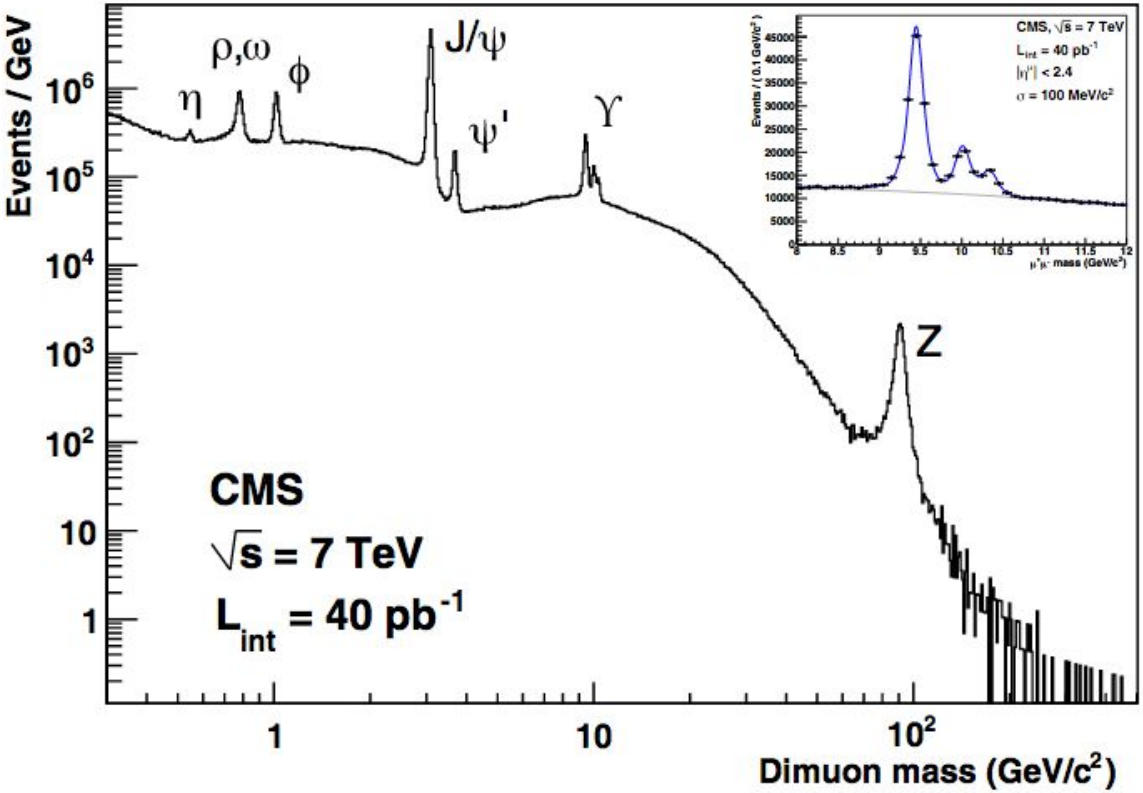
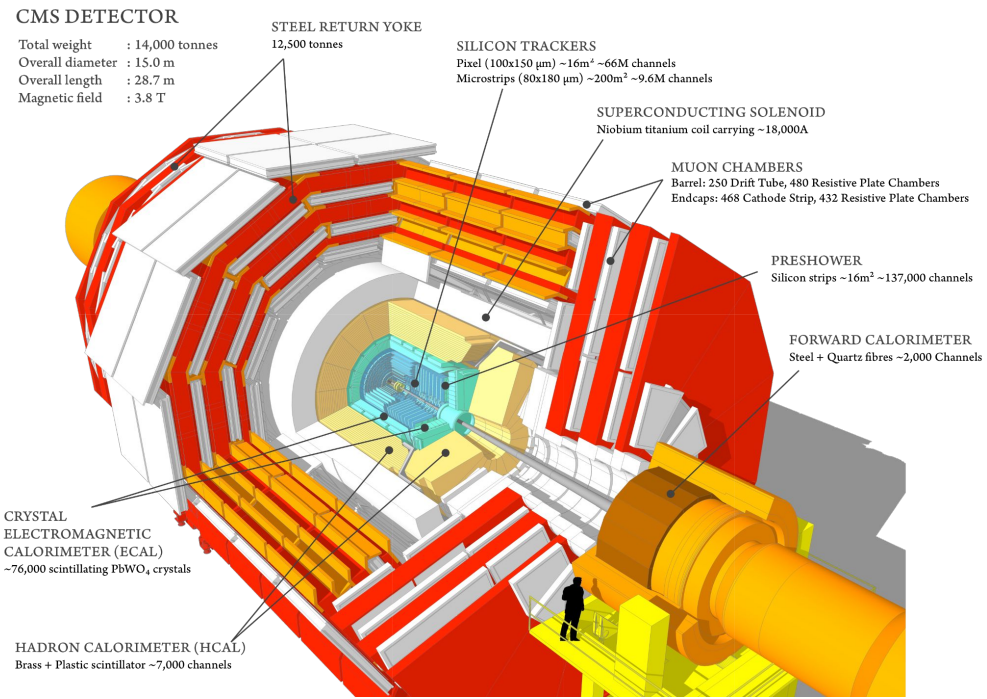
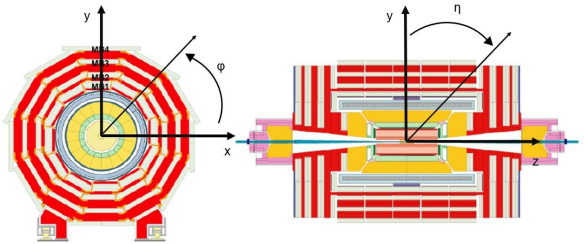
Invariant mass distribution



CMS - coordinate system



- Cylindrical coordinate system with origin at the interaction point



- The angular distribution of particles - rapidity

$$y = \frac{1}{2}\ln\left(\frac{E+p_z}{E-p_z}\right) \xrightarrow{\text{p} \gg \text{m}} \eta = -\ln\left(\tan\frac{\theta}{2}\right)$$

- The angular distance between particles:

$$\Delta R = \sqrt{\Delta\phi^2 + \Delta\eta^2}$$

CMS - pseudorapidity